

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

(10) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許公開番号

特開平7-115934

(43) 公開日 平成7年(1995)5月9日

(51) Int. Cl.

A 2 8 L 1/30

識別記号

B
2

庁内整理番号

P I

技術表示箇所

審査請求 未請求 請求項の数 2 書面 (全 3 頁)

(21) 出願番号

特願平5-288849

(22) 出願日

平成5年(1993)10月22日

(71) 出願人 533218188

株式会社はいる

大阪市北区天神橋5丁目8番12号 (大洞橋ビル)

(72) 発明者 塩津 立三

大阪市北区池田町1-2-572

(54) 【発明の名称】 瘦身用食品

(57) 【要約】

【目的】 瘦身用食品

【構成】 α -サイクロデキストリン、 α -リノレン酸を含有して成る。

1 of 2 DOCUMENTS

Copyright © 1999 European Patent Office
INPADOC

BASIC-PATENT:

Japan (JP) 7,115,934; A2; May 9, 1995

PATENT FAMILY

Number of Patents: 1

JAPAN (JP)

PATENT (Number; Kind; Date): Japan (JP) 7,115,934; A2; May 9, 1995

TITLE: DIET FOOD

INVENTOR: SHIOZU TATSUZO

PRIORITY (Number; Kind; Date):

Japan (JP) 93-298849; A; October 22, 1993

PATENT ASSIGNEE: HAIRU KK

APPLICATION (Number; Kind; Date): Japan (JP) 93298849; A; October 22, 1993

INT-CL: A23L1/30 (Section A, Class 23, Sub-class L, Group 1, Sub-group 30)

DERWENT NUMBER: C95-202800

CHEMICAL ABSTRACT NUMBER: 123(09)110646F

LOAD-DATE: April 17, 1999



(19)

(11) Publication number:

Generated Document.

PATENT ABSTRACTS OF JAPAN

(21) Application number: 05298849

(51) Intl. Cl.: A23L 1/30

(22) Application date: 22.10.93

(30) Priority:		(71) Applicant: HAIRU:KK
(43) Date of application publication:	09.05.95	(72) Inventor: SHIOZU TATSUZO
(84) Designated contracting states:		(74) Representative:

(54) DIET FOOD**(57) Abstract:**

PURPOSE: To obtain a diet food containing α -cyclodextrin and α -linolenic acid and useful for preventing obesity and increase in body weight.

CONSTITUTION: This diet food is obtained by mixing (A) 100 pts.wt. of α -cyclodextrin with (B) 0.5-20 pts.wt., preferably 5-7 pts.wt. of α -linolenic acid. The diet food can be contained in a food additive material such as wheat, vegetable cellulose or soybean powder or formed into tablets, pills, granules, etc., using lactose, glucose, starch, etc., as an additive or can directly be contained in various kinds of foods.

COPYRIGHT: (C)1995,JPO

[Title of the Invention]

DIET FOOD

[Abstract]

[PURPOSE] To obtain a diet food.

[CONSTITUTION] This diet food comprises α -cyclodextrin, α -linolenic acid.

[Claims]

1. A diet food comprising α -cyclodextrin and α -linolenic acid.

2. The diet food according to Claim 1 wherein the food comprises 0.5-20 pts.wt. of α -linolenic acid relative to 100 pts.wt. of α -cyclodextrin.

[Detailed Description of the Invention]

[0001]

(FIELD OF THE INVENTION)

The present invention relates a diet food.

[0002]

(Background of the Related Art)

There has been known generally three species of isomeric materials in cyclodextrin in view of a difference of molecular structure thereof, more particularly, such as α -cyclodextrin, β -cyclodextrin and γ -cyclodextrin. Such cyclodextrins have been available as materials for foods for a long time. Especially, β -cyclodextrin is used in a wide

application based on an encapsulation function thereof, for example, as a taste improving agent and/or a powdery alcohol. However, the β -cyclodextrin is a digestible material absorbed within small intestine of a human body to derive a supernutrition, thus, is absolutely unsuitable as a material for diet food. In recent years, it has been disclosed and/or reported that one of the cyclodextrins, the γ -cyclodextrin has a particular feature of capable being hardly digested by digestive enzymes of the human so that it may be useable as the material for diet food. Furthermore, it was also found that the α -cyclodextrin effects to selectively adsorb and excrete free fatty acids.

[0003]

Meanwhile, it is known that α -linolenic acid is efficient to reduce cholesterol in plasma, to inhibit platelet aggregation, to extend lifetime, to protect a chronic disease and/or to improve allergic effect, in turn, to preserve one's health.

[Object of the Invention]

[0004]

As the result of intensive studies by the present inventors in order to develop novel diet food, it was found out that, if the above α -cyclodextrin and α -linolenic acid together among a number of compounds useful for preventing obesity are used, a synergistic effect involved by both of the compounds generates an efficiency to prevent the obesity and an increase in body weight so that these compounds are

extremely preferable to prepare diet food products to lead a completion of the present invention. Briefly, the present invention relates a novel diet food comprising said α -cyclodextrin and α -linolenic acid.

[Constitution of the Invention]

[0005]

A diet food according to the present invention comprises α -cyclodextrin and α -linolenic acid, particularly, 100 pts.wt. of the former and 0.5-20 pts.wt., more preferably, 5-7 pts.wt. of the latter.

[0006]

The α -cyclodextrin used in the present invention is not particularly limited to, but includes any ones commonly known. Also, the α -cyclodextrin can be used alone and/or in a form of mixture in compatible with other materials.

[0007]

The α -linolenic acid used in the present invention can be also used alone and/or in a form of mixture combined with other components and/or materials, that is, perilla oil being exemplified as the α -linolenic acid.

[0008]

The present necessarily needs both of the above cited compounds at the same time; in addition to, exhibits a superior performance to prevent the obesity and the increase in weight caused by the synergistic effect derived from both of the compounds. Such synergistic effect is particularly remarkable when the α -linolenic acid is contained in an

amount of 0.5-20 weight parts, more preferably 5-7 weight parts relative to 100 weight parts of α -cyclodextrin. The synergistic effect will be obviously verified from the experimental examples described below.

[0009]

In accordance with the present invention, the α -cyclodextrin and the α -linolenic acid together can be contained in a variety of foods or food additive materials; and may be formed into any desirable shapes including tablets, pills, granules, etc. by adding generally known additives. Such food additive materials are not particularly restricted, but include a number of materials such as wheat, vegetable cellulose or soybean powder. Further, the tablets, pills, granules or so on can be diluted with any additional diluents, for example, lactose, glucose, starch or the like.

[0010]

The following examples further illustrate the above synergistic effect according to the present invention, but it is understood that the invention is not limited thereto.

[Experimental Example]

[0011]

After preparing 4 groups of rats with 6 male rats in six-weeks after birth per group, each group was bred by feeding tablet feed mixture prepared in the following weight ratio with 10g per day then, after 30, 60, and 90 days, respective rats in each group were measured their weights.

First group;	α -cyclodextrin	16% by weight
--------------	------------------------	---------------

	α -lin lenic acid	0% by weight
Second group;	α -cyclodextrin	0% by weight
	α -linolenic acid	1% by weight
Third group;	α -cyclodextrin	14% by weight
	α -linolenic acid	2% by weight
Fourth group;	α -cyclodextrin	0% by weight
	α -linolenic acid	0% by weight

A result of the above experimental example is illustrated in Tables 1 to 4 listed below. Herein, numerical values in the tables are expressed in g unit.

[Table 1]

(first group)				
Specimen	At beginning the test	After 30 days	After 60 days	After 90 days
No.	Weight	weight	weight	Weight
1	500.5	499.5	499.0	498.5
2	498.0	497.5	497.0	496.5
3	499.5	498.5	498.0	497.5
4	501.0	500.0	499.5	499.0
5	499.5	499.0	498.5	497.5
6	502.5	500.5	500.0	499.0

[Table 2]

(second group)				
Specimen	At beginning the test	After 30 days	After 60 days	After 90 days
No.	Weight	weight	weight	weight

7	499.5	500.0	500.0	500.5
8	501.5	501.5	501.5	501.5
9	500.0	500.5	500.5	501.0
10	497.5	498.0	498.0	498.5
11	498.0	498.0	498.0	498.0
12	502.0	502.0	502.5	503.0

[Table 3]

Specimen No.	At beginning the test Weight	(third group)		
		After 30 days weight	After 60 days weight	After 90 days weight
13	501.5	488.5	481.5	477.0
14	499.5	487.0	480.0	475.5
15	500.0	487.5	480.0	477.0
16	500.5	486.0	479.5	470.5
17	499.0	486.5	479.0	474.5
18	500.0	488.0	480.5	476.5

[Table 4]

Specimen No.	At beginning the test Weight	(fourth group)		
		After 30 days weight	After 60 days weight	After 90 days weight
19	499.0	500.5	501.0	502.0
20	500.0	502.0	502.5	503.0
21	501.0	502.0	503.0	503.5
22	498.0	500.0	500.5	501.0

23	499.5	500.5	501.0	502.0
24	500.0	501.0	502.0	503.0

As illustrated in the results of Tables 1 to 4, with reference to a case of breeding rats with the tablet feeds comprising neither the α -cyclodextrin of the fourth group nor the α -linolenic acid of the fourth group, the average weights of respective rats according to the first to the fourth groups after 90 days of the experiment are listed in the following Table 5, together with increase or decrease in the average weight and their relative ratios.

[Table 5]

(increase or decrease in average weight
and relative ratio thereof)

Group	Before test	After 90 days	Increase or decrease in average weight	Relative ratio
1	500.00	498.00	- 2.00	- 0.4%
2	499.75	500.41	0.66	0.1%
3	500.08	475.16	- 24.92	- 4.9%
4	499.58	502.41	2.83	0.5%

As understood in the above result, it was expected that the first group and the second group comprising only the α -cyclodextrin and the α -linolenic acid, respectively, expressed a little decrease in weight but with an extremely slight value of ratio. Contrary to these groups, the third group expressed a noticeable reduction of weight, in turn, an obvious synergy effect.

[Example 1]

[0012]

To 30 weight parts of α -cyclodextrin, 3 weight parts of

evening primrose oil containing 60 weight parts of α -linolenic acid was introduced and admixed with the addition of 67 weight parts of lactose and starch; then, the admixture was purified into a food material.

[Effect of the Invention]

[0013]

As described above, according to the present invention a diet food containing α -cyclodextrin and α -linolenic acid shows an extremely superior performance to prevent the obesity and the increase in body weight by a synergistic effect caused from both of said compounds. Thereby, the diet food of the present invention is a profitable food for actually realizing the diet function; and makes it possible to protect various diseases caused by the obesity or the overweight conditions.